

1 of 24

Marked-up Set of Claims (According to 37 CFR 1.173(b)(2))

1. (Seven times amended) A method for dewatering biological sludge [that has been digested by] from a thermophilic digestion process, comprising:

a. adding a polymeric quaternary ammonium compound[s], as primary component, to the biological sludge; and

b. adding a polyacrylamide to the biological sludge;

such that any combination[s] of the polymeric quaternary ammonium compound[s] and of the polyacrylamide[s] enhance dewatering of the sludge.

2. (Seven times amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound[s] is[are from] di-allyl di-methyl ammonium chloride (DADMAC)[family].

3. (Eight times amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound[s] is[are from] epichlorohydrin di-methyl amine (epi-DMA)[family].

4. (Three times amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is added directly to the sludge; and _____
_____, [, upon] following the formation of microflocs of the sludge from addition of the polymeric quaternary ammonium compound, a cationic polyacrylamide is added[to form a floc that dewateres the sludge].

5. (Three times amended) The method for dewatering biological sludge according to claim 4, wherein the polymeric quaternary ammonium compound and the cationic polyacrylamide are in an approximate[ly] 1:1 ratio, with the cationic polyacrylamide having a higher molecular weight than the polymeric quaternary ammonium compound[does].

6. (Three times amended) The method for dewatering biological sludge according to claim 4, wherein the ratio[s] of [the]polymeric quaternary ammonium compound with respect to [the]cationic polyacrylamide range from about 1:10 to about 20:1.

7. (Twice amended) The method for dewatering biological sludge according to claim 4, wherein the polymer concentration to solids ratio of total polymer dosage requirement in relationship to percentage of solids component of the sludge is between about 50 ppm:1 percent and about 300 ppm:1 percent.

8. (Twice amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is added directly to the sludge, in an amount sufficient to cause formation of a cationic overcharge within a developed microfloc system, and wherein
the polyacrylamide is[and an] anionic[polyacrylamide is then added for final floc formation].

9. (Cancelled)

10. (Three times amended) The method for dewatering biological sludge according to claim 8, wherein the polymeric quaternary ammonium compound and the anionic polyacrylamide are in a approximate[ly] 10:1 ratio, with the anionic polyacrylamide having a higher molecular weight than the polymeric quaternary ammonium compound[does].

11. (Original) The method for dewatering biological sludge according to claim 10, wherein the anionic polyacrylamide is about 40% anionic.

12. (Three times amended) The method for dewatering biological sludge according to claim 8, wherein the ratio[s] of the polymeric quaternary ammonium compound to the anionic polyacrylamide ranges from about 1:10 to about 20:1.

13. (Three times amended) The method for dewatering biological sludge according to claim 8, wherein the polymer concentration to solids ratio of total polymer dosage requirement in relationship to percentage of solids component of the sludge is between approximately 50 ppm:1 percent and approximately 300 ppm:1 percent.

14. (Original) The method for dewatering biological sludge according to claim 1, wherein the biological sludge is mixed with primary sludge.

15. (Eight times amended) [A composition]The method for dewatering biological sludge according to claim 1, [comprising] wherein:

_____ said polymeric quaternary ammonium compound[s, as primary component, and] is added along with a cationic polyacrylamide; and

_____ said polymeric quaternary ammonium compound and cationic polyacrylamide[components being] are present [in the composition in a ratio]to enable dewatering of the biological sludge[the composition to function as an agent for dewatering biological sludge from a thermophilic digestion process].

16. (Seven times amended) The method for dewatering biological sludge according to claim 1, wherein the polyacrylamide and the polymeric quaternary ammonium compound[s are]is [used]added in solution [or in dry] form.

17. (Cancelled)

18. (Cancelled)

19. (Three times amended) The method of claim 1, wherein said polyacrylamide is cationic or anionic.

20. (Cancelled)

21. (Cancelled)

22. (Three times amended) A method for dewatering a sludge comprising water and solids, wherein the solids comprise thermophiles, the method comprising:
_____ contacting the sludge according to a technique selected from a group of techniques including:
_____ contacting the sludge with a polymeric quaternary ammonium compound along with a cationic polyacrylamide; and
_____ contacting the sludge first with a polymeric quaternary ammonium compound and then with a cationic polyacrylamide;
_____ to form a floc.

23. (Cancelled)

24. (Three times amended) The method of claim 22, wherein said polymeric quaternary ammonium compound comprises a polymeric quaternary ammonium compound having a molecular weight in the range of about 500,000 to about 3,000,000, and said cationic polyacrylamide comprises a cationic polyacrylamide having a molecular weight in the range of about 5,000,000 to about 15,000,000.

25. (Twice amended) The method of claim 22, wherein said polymeric quaternary ammonium compound is added in an amount sufficient to form microflocs of said thermophiles; and wherein
_____ said cationic polyacrylamide is added in an amount sufficient to agglomerate the microflocs into flocs for dewatering.

26. (Four times amended) The method of claim 22, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

27. (Twice amended) The method of claim 25, wherein the ratio of said polymeric quaternary ammonium compound to said cationic polyacrylamide is in the range of about 1:10 to about 20:1.

28. (Three times amended) The method of claim 25, wherein the concentration of said polymeric quaternary ammonium compound and said cationic polyacrylamide to the percentage of solids in said sludge is in the range of about 50 ppm:1 percent to about 300 ppm:1 percent.

29. (Canceled)

30. (Canceled)

31. (Canceled)

32. (Canceled)

33. (Twice amended) A method for dewatering a sludge comprising water and thermophiles, the method comprising:
adding to the sludge a polymeric quaternary ammonium compound.

34. (Four times amended) The method of claim 33, wherein said polymeric quaternary ammonium compound comprises a polymeric quaternary ammonium compound having a molecular weight of greater than about 5,000,000.

35. (Three times amended) The method of claim 33, wherein said polymeric quaternary ammonium compound is added in an amount sufficient to form microflocs of the thermophiles.

36. (Four times amended) The method of claim 35, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

37. (Three times amended) The method of claim 35, wherein the concentration of said polymeric quaternary ammonium compound to the percentage of solids in said sludge is in the range of about 50 ppm:1 percent to about 300 ppm:1 percent.

38. (Four times amended) The method of claim 35, wherein said polymeric quaternary ammonium compound is added in an amount sufficient to cause formation of said thermophiles into a developed microfloc system having a cationic overcharge, and wherein an anionic polyacrylamide is added for final floc formation.

39. (Cancelled)

40. (Three times amended) The method of claim 38, wherein the concentration of said polymeric quaternary ammonium compound to the percentage of solids in said sludge is in the range of about 50 ppm:1 percent to about 300 ppm:1 percent.

41. (Three times amended) A sludge composition comprising:
water;
polyacrylamide comprising a cationic or an anionic moiety;
a polymeric quaternary ammonium compound; and
solids comprising thermophiles.

42. (Cancelled)

43. (Cancelled)

44. (Four times amended) The sludge composition of claim 41, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

45. (Three times amended) The sludge composition of claim 41, wherein the ratio of said polymeric quaternary ammonium compound to said polyacrylamide is in the range of about 1:10 to about 20:1.

46. (Three times amended) The sludge composition of claim 41, wherein the concentration of said polymeric quaternary ammonium compound and said polyacrylamide to the percentage of solids in said sludge is in the range of about 50 ppm:1 percent to about 300 ppm:1 percent.

47. (Three times amended) The sludge composition of claim 41, wherein said polymeric quaternary ammonium compound comprises a polymeric quaternary ammonium compound having a molecular weight in the range of about 500,000 to about 3,000,000, and said polyacrylamide comprises a polyacrylamide having a molecular weight in the range of about 5,000,000 to about 15,000,000.

48. (Three times amended) A sludge composition comprising:
water;
polyacrylamide comprising a cationic or an anionic moiety;
a polymeric quaternary ammonium compound; and
solids comprising microflocs of thermophiles.

49. (Cancelled)

50. (Cancelled)

51. (Four times amended) The sludge composition of claim 48, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

52. (Three times amended) The sludge composition of claim 48, wherein the ratio of said polymeric quaternary ammonium compound to said polyacrylamide is in the range of about 1:10 to about 20:1.

53. (Three times amended) The sludge composition of claim 48, wherein the concentration of said polymeric quaternary ammonium compound and said polyacrylamide to the percentage of solids in said sludge is in the range of about 50 ppm:1 percent to about 300 ppm:1 percent.

54. (Three times amended) The sludge composition of claim 48, wherein said polymeric quaternary ammonium compound comprises a polymeric quaternary ammonium compound having a molecular weight in the range of about 500,000 to about 3,000,000, and said polyacrylamide comprises a polyacrylamide having a molecular weight in the range of about 5,000,000 to about 15,000,000.

55. (Three times amended) A sludge composition comprising:
water;
polyacrylamide comprising a cationic or an anionic moiety;
a polymeric quaternary ammonium compound; and
solids comprising an agglomeration of microflocs of thermophiles.

56. (Cancelled)

57. (Cancelled)

58. (Four times amended) The sludge composition of claim 55, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

59. (Three times amended) The sludge composition of claim 55, wherein the ratio of said polymeric quaternary ammonium compound to said polyacrylamide is in the range of about 1:10 to about 20:1.

60. (Three times amended) The sludge composition of claim 55, wherein the concentration of said polymeric quaternary ammonium compound and said polyacrylamide to the percentage of solids in said sludge is in the range of about 50 ppm:1 percent to about 300 ppm:1 percent.

61. (Three times amended) The sludge composition of claim 55, wherein said polymeric quaternary ammonium compound comprises a polymeric quaternary ammonium compound having a molecular weight in the range of about 500,000 to about 3,000,000, and said polyacrylamide comprises a polyacrylamide having a molecular weight in the range of about 5,000,000 to about 15,000,000.

62 – 66. (Cancelled)

67. (Amended) A sludge composition comprising:
_____ water;
_____ thermophiles; and
_____ a polymeric quaternary ammonium compound.

68. (Four times amended) The sludge composition of claim 67, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

69. (Twice amended) The sludge composition of claim 67, wherein said polymeric quaternary ammonium compound is present in an amount sufficient to form microflocs of said thermophiles.

70. (Twice amended) The sludge composition of claim 67, wherein said polymeric quaternary ammonium compound is present in an amount sufficient to cause formation of said thermophiles into a developed microfloc system having a cationic overcharge.

71. (Four times amended) The sludge composition of claim 67, wherein said polymeric quaternary ammonium compound comprises a polymeric quaternary ammonium compound having a molecular weight of at least about 5,000,000.

72. (Canceled)

73. (Amended) The method of claim 33, wherein a cationic polyacrylamide is added.

74. (New) A method for dewatering a sludge comprising water and thermophiles, the method comprising:
adding to the sludge a quaternized polyacrylamide.

75. (New) The method of claim 74, wherein said quaternized polyacrylamide comprises at least one selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

76. (New) The method of claim 74, wherein the concentration of said quaternized polyacrylamide to the percentage of solids in said sludge is in the range of about 50 ppm:1 percent to about 300 ppm:1 percent.

77. (New) The method of claim 74, wherein a cationic polyacrylamide is added.

78. (New) The method of claim 77, wherein said cationic polyacrylamide comprises a cationic polyacrylamide having a molecular weight in the range of about 5,000,000 to about 15,000,000.

79. (New) The method of claim 77, wherein the concentration of said cationic polyacrylamide and said cationic polyacrylamide to the percentage of solids in said sludge is in the range of about 50 ppm:1 percent to about 300 ppm:1 percent.

Claim List – Status and Support of Current Amendment Changes

Claim	Status	Type	Support of Changes
1	Pending	Method	There are no changes in this amendment.
2	Pending	Method	"variety" has been removed - support is found in the abstract and col. 1 lines 10-17 and col. 5 line 2-8.
3	Pending	Method	"variety" has been removed - support is found in the abstract and col. 1 lines 10-17 and col. 5 line 2-8.
4	Pending	Method	There are no changes in this amendment.
5	Pending	Method	There are no changes in this amendment.
6	Pending	Method	There are no changes in this amendment.
7	Pending	Method	There are no changes in this amendment.
8	Pending	Method	There are no changes in this amendment.
9	Cancelled	N/A	N/A
10	Pending	Method	There are no changes in this amendment.
11	Original	Method	There are no changes in this amendment.
12	Pending	Method	There are no changes in this amendment.
13	Pending	Method	There are no changes in this amendment.
14	Pending	Method	There are no changes in this amendment.
15	Pending	Method	"comprising" has been replaced by "wherein" – grammatical correctness; "a" has been replaced by "said" – antecedent basis; "primary component" has been replaced by "is added along with" - "being" has been replaced by "are" – support is found in the abstract and in col. 4 lines 51 – 54.
16	Pending	Method	"is used in solution or dry form" is inserted to relate to both polyacrylamide, as well as polymeric quaternary ammonium compound. "one or both of" has been removed - support is found in col. 7 line 49 – col. 9 line 49, along with col. 6 line 49 – 57 and col. 7 line 34 – 37.
17	Cancelled	N/A	N/A
18	Cancelled	N/A	N/A
19	Pending	Method	"the" is replaced with "said" – grammatical correctness and antecedent basis.
20	Cancelled	N/A	N/A
21	Cancelled	N/A	N/A
22	Pending	Method	"the" is replaced with "said" – grammatical correctness and antecedent basis.
23	Cancelled	N/A	N/A
24	Pending	Method	"the" is replaced with "said" – grammatical correctness and antecedent basis.
25	Pending	Method	"the" is replaced with "said" – grammatical correctness and antecedent basis.

26	Pending	Method	"variety" has been removed - support is found in the abstract and col. 1 lines 10-17 and col. 5 lines 2-8; "the" is replaced with "said" – grammar and antecedent basis.
27	Pending	Method	"the" is replaced by "said" – grammatical correctness and antecedent basis.
28	Pending	Method	"the" is replaced by "said" – grammatical correctness and antecedent basis.
29	Canceled	N/A	N/A
30	Canceled	N/A	N/A
31	Canceled	N/A	N/A
32	Canceled	N/A	N/A
33	Pending	Method	There are no changes in this amendment.
34	Pending	Method	"the" is replaced by "said" – grammatical correctness and antecedent basis.
35	Pending	Method	"the" is replaced by "said" – grammatical correctness and antecedent basis.
36	Pending	Method	"variety" has been removed - support is found in the abstract and col. 1 lines 10-17 and col. 5 lines 2-8; "the" is replaced with "said" – grammar and antecedent basis.
37	Pending	Method	"the" is replaced by "said" – grammatical correctness and antecedent basis.
38	Pending	Method	"the" is replaced by "said" – grammatical correctness and antecedent basis.
39	Cancelled	N/A	N/A
40	Pending	Method	"the" is replaced by "said" – grammatical correctness and antecedent basis.
41	Pending	Composition	There are no changes in this amendment.
42	Cancelled	N/A	N/A
43	Cancelled	N/A	N/A
44	Pending	Composition	"variety" has been removed - support is found in the abstract and col. 1 lines 10-17 and col. 5 lines 2-8; "the" is replaced with "said" – grammar and antecedent basis.
45	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
46	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
47	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
48	Pending	Composition	There are no changes in this amendment.
49	Cancelled	N/A	N/A
50	Cancelled	N/A	N/A
51	Pending	Composition	"variety" has been removed - support is found in the abstract and col. 1 lines 10-17 and col. 5 lines 2-8; "the" is replaced with "said" – grammar and antecedent basis.

52	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
53	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
54	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
55	Pending	Composition	There are no changes in this amendment.
56	Cancelled	N/A	N/A
57	Cancelled	N/A	N/A
58	Pending	Composition	"variety" has been removed - support is found in the abstract and col. 1 lines 10-17 and col. 5 lines 2-8; "the" is replaced with "said" – grammar and antecedent basis.
59	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
60	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
61	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
62	Cancelled	N/A	N/A
63	Cancelled	N/A	N/A
64	Cancelled	N/A	N/A
65	Cancelled	N/A	N/A
66	Cancelled	N/A	N/A
67	Pending	Composition	There are no changes in this amendment.
68	Pending	Composition	"variety" has been removed - support is found in the abstract and col. 1 lines 10-17 and col. 5 lines 2-8; "the" is replaced with "said" – grammar and antecedent basis.
69	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis; "for" is replaced by "to" – typographical error and grammatical correctness.
70	Pending	Composition	"the" is replaced by "said" – grammatical correctness and antecedent basis.
71	Pending	Composition	"in the range" has been removed - grammatical correctness; "the" is replaced by "said" – grammatical correctness and antecedent basis; support is found in col. col. 5 lines 52-63.
72	Canceled	N/A	N/A
73	Pending	Method	There are no changes in this amendment.
74	Pending	Method	Support is found in the specification col. 6 line 44 to col. 7 line 38, along with Examples 4, 5, 6 and 7.
75	Pending	Method	Support is found in the specification col. 6 line 44 to col. 7 line 38, along with Examples 4, 5, 6 and 7.
76	Pending	Method	Support is found in the specification col. 6 line 44 to col. 7 line 38, along with Examples 4, 5, 6 and 7.
77	Pending	Method	Support is found in the specification col. 6 line 44 to col. 7 line 38, along with Examples 4, 5, 6 and 7.

78	Pending	Method	Support is found in the specification col. 6 line 44 to col. 7 line 38, along with Examples 4, 5, 6 and 7.
79	Pending	Method	Support is found in the specification col. 6 line 44 to col. 7 line 38, along with Examples 4, 5, 6 and 7.

Examiner's Remarks, Objections and Rejections with Applicant's Response**"Allyl"/DADMAC Family Rejections**

Claims 2, 3, 26, 30, 36, 44, 51, 58, 68 are rejected under 35 USC Sec. 112 (2nd) for failing to particularly point out and distinctly claim the invention. ...

Applicant's Response

Applicant understands the Examiner's rejection. To address the Examiner's rejection under Section 112 (2nd) paragraphs, Applicant has amended Claims 2, 3, 26, 36, 44, 51, 58 and 68 to read as follows:

"2. The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is di-allyl di-methyl ammonium chloride (DADMAC).

3. The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is epichlorohydrin di-methyl amine (Epi-DMA).

26. The method of claim 22, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

36. The method of claim 35, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

44. The sludge composition of claim 41, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

51. The sludge composition of claim 48, wherein said polymeric quaternary ammonium compound comprises at least one compound selected

from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

58. The sludge composition of claim 55, wherein said polymeric quaternary ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine.

68. The sludge composition of claim 67, wherein said polymeric ammonium compound comprises at least one compound selected from the group consisting of di-allyl di-methyl ammonium chloride and epichlorohydrin di-methyl amine."

In all cases the term "DADMAC variety" has been replaced with the term "di-allyl di-methyl ammonium chloride;" and the term "Epi-DMA variety" has been replaced with the term "epichlorohydrin di-methyl amine." As such, Applicant respectfully submits that the claim amendments favorably overcome the Examiner's rejection under 35 USC section 112, second paragraph.

Applicant appreciates the Examiner's recognition that support clearly exists for the "variety phraseology" and that "there exist many variants of the polyquaternary amine moiety." As such, for purposes of exemplifying representative polymeric quaternary ammonium compounds, Applicant has amended claims 2 and 3 to reflect DADMAC and Epi-DMA, respectively, and has amended claims 26, 30, 36, 44, 51, 58 and 68 to reflect the group consisting of: DADMAC, Epi-DMA and quaternized polyacrylamide. Therefore, Applicant sees an area of agreement with the Examiner. And, in an effort to reach that agreement, claims 2, 3, 26, 36, 44, 51, 58 and 68 are so amended. Applicant respectfully requests an allowance of claims 2, 3, 26, 36, 44, 51, 58 and 68 as amended herein.

"One or both...solution, emulsion, or in dry form" - Sec. 112(2'nd) Paragraph

Claim 16 is rejected under 35 USC Sec. 112(2'nd) for failing to particularly point out and distinctly claims the invention. ...

Sec. 112 (1'st para) – lack of written description

Claim 16 is rejected under 35 USC Sec. 112 (first paragraph) for failure of the application to describe the claimed subject matter. ...

Applicant's Response

Applicant appreciates and understands the Examiner's rejection. Claim 16 has been amended to read:

16. The method for dewatering biological sludge according to claim 1, wherein said polyacrylamide and said polymeric quaternary ammonium compound is added in solution form.

Based on the foregoing, Applicant respectfully submits that the Examiner's rejections of claim 16 under 35 USC section 112, first paragraph and second paragraph, have been respectfully traversed. As such, Applicant requests allowance of claim 16 as amended herein.

"wherein the polyacrylamide is anionic instead of cationic"

Claim 29 is rejected under 35 USC Sec. 112(2nd paragraph) for failing to particularly point out and distinctly claim the invention. ...

Applicant's Response

Applicant understands and appreciates the Examiner's rejection. Claim 29 has been canceled. In addition, claims 30, 31 and 32 have been canceled, as those claims depend upon claim 29.

"wherein the polyacrylamide is cationic or anionic"

Claim 72 is rejected under 35 USC Sec. 112(2nd paragraph) for failing to particularly point out and distinctly claim the invention. ...

Applicant's Response

Applicant understands and appreciates the Examiner's rejection. Applicant has canceled claim 72.

Other Sec. 112, 2nd Paragraph rejections

Claim 15 is rejected under 35 USC Sec. 112(2nd) for failing to particularly point out and distinctly claim the invention. ...

Applicant's Responses

Applicant understands and appreciates the Examiner's rejection. Applicant has amended claim 15 to state:

"15. The method for dewatering biological sludge according to claim 1, wherein:

said polymeric quaternary ammonium compound is added along with a cationic polyacrylamide; and

said polymeric quaternary ammonium compound and cationic polyacrylamide are present to enable dewatering of the biological sludge."

As Applicant has amended claim 15 above, Applicant has respectfully traversed the Examiner's rejection. Applicant respectfully requests an allowance of claim 15 as amended herein.

Applicant also noted the Examiner's suggestion to replace "a" with "said" in claim 15 of the office action. To provide proper antecedent basis, grammatical correctness and comply with direction provided by the Examiner, Applicant has replaced "the" with "said" in claims 19 to 73 when there is an antecedent basis.

Claim Objection

Objection is made to Claim 71 because of the following informalities: Claim 71 recites the phrase, "in the range of at least about 5,000,000." A range is defined by a lower and an upper endpoint. The claim recites a lower endpoint, i.e., "about 5,000,000," but not an upper

endpoint. Appropriate correction is required. It is suggested that the phrase “in the range” be deleted from claim 71.

Applicant's Responses

Applicant understands and appreciates the Examiner's rejection. Applicant has amended claim 71 to state:

“71. The sludge composition of claim 67, wherein said polymeric quaternary ammonium compound comprises a polymeric quaternary ammonium compound having a molecular weight of at least about 5,000,000.”

As Applicant has amended claim 71 above, Applicant has respectfully traversed the Examiner's rejection. Applicant respectfully requests an allowance of claim 71 as amended herein.

Examiner's After Final Advisory Action (After Final Amendment Not Entered)

3. (a) i. Whether claim 22, broadened by deletion of the word “cationic”...

Applicant's Response

Applicant has removed the term “cationic” from claim 22.

3. (a) ii. Whether “quaternized polyacrylamide” is a “polymeric quaternary ammonium compound”...

Applicant's Response

While applicant can simply remove “quaternized polyacrylamide” from claims 26, 30, 36, 44, 51, 58 and 68, the question posed by the Examiner creates the question of whether the term “polymeric quaternary amine” will provide coverage for a “quaternized polyacrylamide”; as, this is an important aspect of the instant invention in relation to Methods 3 and 4 of the specification; this is while Applicant has been looking to claim 33 as providing coverage for Methods 3 and 4. However, the Examiner's

observation does correctly present that the Applicant does not in the specification define a relationship between the terms "polymeric quaternary amine" and "quaternized polyacrylamide"; this is even though it is thoroughly believed by Applicant that both the common English usage of these terms and the industry use of these terms would find "polymeric quaternary ammonium compound" to be a genus including "quaternized polyacrylamide."

In an effort to respond to the Examiner's question and to clearly provide Applicant coverage for Methods 3 and 4 in the specification, Applicant is adding new claims, claims 74 to 79. Claims 74 to 79 have support in the specification from col. 6 line 44 to col. 7 line 38, along with Examples 4, 5, 6 and 7.

3. (a) iii. Whether "ammine" is an acceptable...

Applicant's Response

Oops! Applicant apologizes to the Examiner for creating such a typo and copying said typo to all related claims. Applicant has correctly spelled "amine" as "amine."

3. (b). Proposed claim 16 raises new matter. The new matter issue is whether there is 35 U.S.C. Sec. 112, first paragraph, support for adding polyacrylamide in "emulsion form."...

Applicant's Response

Upon further review by Applicant, claim 16 depends on claim 1, wherein claim 16 claims in addition to claim 1 a "form" for the addition of a polyacrylamide and a "form" for the addition of a polymeric quaternary amine. This is while the "form" of "addition" presented by Applicant in the specification was as "solution." This solution "form" of "addition", as presented in the specification, is regardless of the "form" of the "delivered" polymer, be that "form" dry, emulsion or solution. Therefore, to be fully enabling, claim 16 has been reworded to state:

"16. The method for dewatering biological sludge according to claim 1, wherein said polyacrylamide and said polymeric quaternary ammonium compound is added in solution form."

7. Claim(s) Patented or confirmed: 1, 4-8, 10-14, 19, 22, 24, 25, 27, 28, 33-35, 37, 38, 40, 41, 45-48, 52-55, 59-61, 67, 69-70, 73.

Applicant Comment

Applicant appreciates the work of the Examiner in this proceeding and the confirmed claims, thus far, in this proceeding.

Conclusion

Applicant respectfully requests entry of this RCE, along with favorable reconsideration of the pending claims. This amendment places the claims in a condition for allowance. The amendments to the claims do not raise any new matter issues and no additional searching is required. Additionally, Applicant requests that in view of this fact, the amendment be entered, and after due consideration of the facts presented herein, the claims be allowed and a certificate be issued.

To facilitate the resolution of any issues or questions presented by this paper, Applicant respectfully requests that the Examiner directly contact the undersigned by phone to further the discussion, reconsideration and allowance of the claims.

Respectfully submitted,

Date: November 23, 2005
(Originally mailed to and received
by USPTO on 10/27/05)

Richard A. Haase
4402 Ringrose Drive
Missouri City, Texas 77459

Telephone: 281.261.9543
Facsimile: 281.261.6505
richard.haase@clearvalue.com

A handwritten signature in black ink, appearing to read 'R. Haase', written over a horizontal line.

Richard A. Haase, Pro Se' Applicant